

SIEMENS



Single Reader Interface ADS5200, ADS5210

Installation manual

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About this document

This **Installation manual** contains instructions for installation, setup, configuration and operation of the ADS5200 (former RIM-020) or ADS5210 (former RIM-021).

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Contacting us

If you have questions or suggestions regarding the product or this documentation, please contact your local SIEMENS representative.

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You can also visit our Web site at: www.buildingtechnologies.siemens.com/.

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Contents

1	Service description	4
2	Safety	5
2.1	Target group.....	5
2.2	General safety precautions	5
3	Standards and guidelines	6
3.1	EU directives	6
3.2	UL directives	6
3.3	C-tick	6
4	Technical Data.....	7
5	Details for ordering	7
6	Description of equipment.....	8
6.1	Features	8
7	Mounting	9
7.1	Prerequisites	9
7.2	Required Tools & Material	9
7.3	Mounting Instructions.....	9
8	Wiring	10
8.1	Dimensions and Layout	11
8.2	Port Description.....	12
8.3	Reader wiring	13
8.4	Links and Jumpers	13
8.5	LEDs	13
8.6	Recommended Cable Specifications	14
9	Supported Card Formats.....	15
10	Programming and Firmware Download.....	16

1 Service description

The ADS5200 (SRI) provides a local interface between an Advanced Central Controller (ACC) and a single card reader. This allows the ADS5200 to receive information regarding the identity of a cardholder and send it to the ACC for verification. In addition, the ADS5200 has the intelligence to report the status of a door and unlock or lock the door as required.

When a cardholder presents their access card at a reader (connected to a SRI), the SRI interprets the encoded information and sends this data to the ACC. The ACC then checks the validity of the cardholder. If the appropriate permissions have been assigned, the ACC then sends a message back to the SRI allowing it to unlock the door and permit access.

Note!

The name of the product has changed from RIM-020 to ADS5200 and this document applies for both.

2 Safety

2.1 Target group

Target readers	Qualification	Activity	Condition of the product
Installer	Technical training for building or electrical installations.	Installs the product, individual components of the product or replacement parts.	Components of the product are not yet installed or need to be replaced or modified.
Operational start up personnel	Technical training for building or electrical installations. Special knowledge of the device/system is required.	Puts the product into operation for the first time, or changes the existing configuration.	The product is installed but not yet configured, or the existing configuration is to be changed.
Service personnel	Technical training for building or electrical installations. Special knowledge of the device/system is required.	Checks the product at regular intervals to ensure that it is in good working order, services the device or system and repairs it or expands and upgrades the system.	Product already in use and requiring servicing.

2.2 General safety precautions

- Read the general safety precautions before operating the device.
- Keep this document for reference.
- Always pass this document on together with the product.
- Please also take into account any additional country-specific, local safety standards or regulations concerning project planning, operation and disposal of the product.

Damage to the device due to electrostatic discharge (ESD)

- Always use wrist straps or similar connected to earth.

Damage due to unsuitable mounting location

- The device should only be used for indoor applications.

3 Standards and guidelines

3.1 EU directives

This product complies with the requirements of the European Directives. The EU declaration of conformity is available from:

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EU directives 2004/108/EG: “Electromagnetic Compatibility (EMC):”

Compliance with the European Directive 2004/108/EG has been proven by testing according to the following standards:

Electromagnetic compatibility	EN 55022 EN 50130-4
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3.2 UL directives

The ADS5200 complies to the UL 294 Access control units. Details can be found under: <http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/gfilenbr.html> with UL File Number: BP9490

3.3 C-tick

The ADS5200 complies to the C-tick Requirements for Australia and New Zealand (equivalent to EN 55022 of the European Directive).

4 Technical Data

Operating Voltage	12 VDC +/-20%
Power Consumption	max. 12 W
Interface	
	FLN connection to controller: RS-485, 2-wire
	To readers: One RS485 bus for one RS485 reader (Cerpas protocol)
	OR
	One Clock/Data / Wiegand ports
Inputs	1 x REX-Button 1 x Door Contact 2 x Auxiliary Input
Output relays	1 x Door opener (30 VDC/2A) 1 x Open-collector Output (12 VDC, max. 100 mA)
Firmware	Flash upgradeable
Indicators	Power, Activity, Communication
Housing (ADS5210)	ABS plastic
IP rating (ADS5210)	IP55
Dimensions (W x H x D)	
	ADS5200: 125mm x 125mm x 34mm 4.92" x 4.92" 1.34"
	ADS5210: 150mm x 150mm x 76mm 5.91" x 5.91" 2.99"
Environmental	
Temperature	Operation: 0 °C to 50 °C Storage: 0 °C to 60 °C
Humidity	10-90% (non-condensing)
Approval	
	ADS5200: CE, UL294, C-Tick
	ADS5210: CE

5 Details for ordering

Type	Order No.	Designation	Weight
ADS5200 ¹	6FL7820-8CA20	Single Reader Interface including base plate, 12 VDC	0,21 kg
ADS5210 ²	6FL7820-8CA21	Single Reader Interface including base plate and plastic case, 12 VDC	0,51 kg

¹ Former type designation: RIM-020

² Former type designation: RIM-021

6 Description of equipment

The ADS5200 controls all access components of a door or barrier with a single card reader. This includes support for an entry reader, exit using a device to request exit, a door strike to lock and unlock the door, and door contact to detect the door position.

The ADS5200 allows the on-board inputs to be supervised individually. This ensures, for example, wire tampering is reported to the system by generating an ALARM message when detected.

The ADS5200 provides two programmable auxiliary input connections for the monitoring of system aspects. This may include the monitoring of a cabinet door, duress switch or PIR motion sensors.

The ADS5200 also provides an open-collector auxiliary output. This allows a buzzer, strobe light or similar device to be connected and can be configured to trigger when security is breached.

By using the latest flash technology, the ADS5200 is fully updateable, and can be easily programmed via the host system to operate in its intended mode. This leading-edge technology allows the ADS5200 to be re-programmed or re-configured and used in conjunction with other Siemens security products, providing a complete and fully expandable access control solution.

6.1 Features

- Supports all popular reader technologies
- Door contact input
- Request-to-Exit input
- 2 auxiliary inputs
- Lock / Door Strike output (relay)
- Auxiliary output (open-collector)
- Reader power source
- Supervision of input wires
- Communications status LED
- Activity status LED
- Power status LED
- Flash memory updateable
- Ability to perform remote maintenance, significantly reducing overall maintenance times
- Field management tool available
- Host system compatibility for firmware and configuration download via ACC

7 Mounting

7.1 Prerequisites

- Devices to be connected to the ADS5200.
- Cabling (RS-485)

7.2 Required Tools & Material

- Medium-duty drill and associated drill-bits (if required)
- 4 to 6 mounting screws or standoffs (approx. 4mm)
- Flat-blade terminal screwdriver
- Wire cutters
- Cable strippers

7.3 Mounting Instructions

1. Remove the ADS5200 from its carton and discard the packaging material.
2. Place the ADS5200 (mounting plate) against the surface to which it is to be affixed and mark the location of the mounting holes.
If being mounted within a cabinet simply align the ADS5200 base-plate with the holes located on the cabinet backplane and proceed to step 3.
It is recommended that you affix the ADS5200 in at least four of the six mounting locations.



WARNING

Do not apply power to the ADS5200 or associated components at this stage.

3. Select the appropriate drill bit according to the mounting surface and hole size and drill the holes in the locations marked (if required).
4. Fasten the ADS5200 (base-plate) to the surface using the correct size and type of screws or standoffs for the surface.
5. Connect the cabling to the ADS5200 PCB (as described in the next section titled 'Wiring').
6. Apply power to the ADS5200 and test its operation.
This step may require installation and programming of the access control host software and download of the firmware instruction set.
Alternatively, the firmware and configuration may be carried out using the FLN Field Service Tool.

8 Wiring

1. It is recommended that you wear a grounding strap while carrying out this procedure.
2. Connect a card or biometric reader to the READER INTERFACE port.



NOTE

The reader must be wired correctly as outlined in the Reader Wiring table in these instructions.

3. Connect the Request-to-Exit switch to the REX port.
4. Connect the door contact sensor to the DOOR/C port.
5. Connect auxiliary inputs (if required) to the AUX1 and AUX2 ports



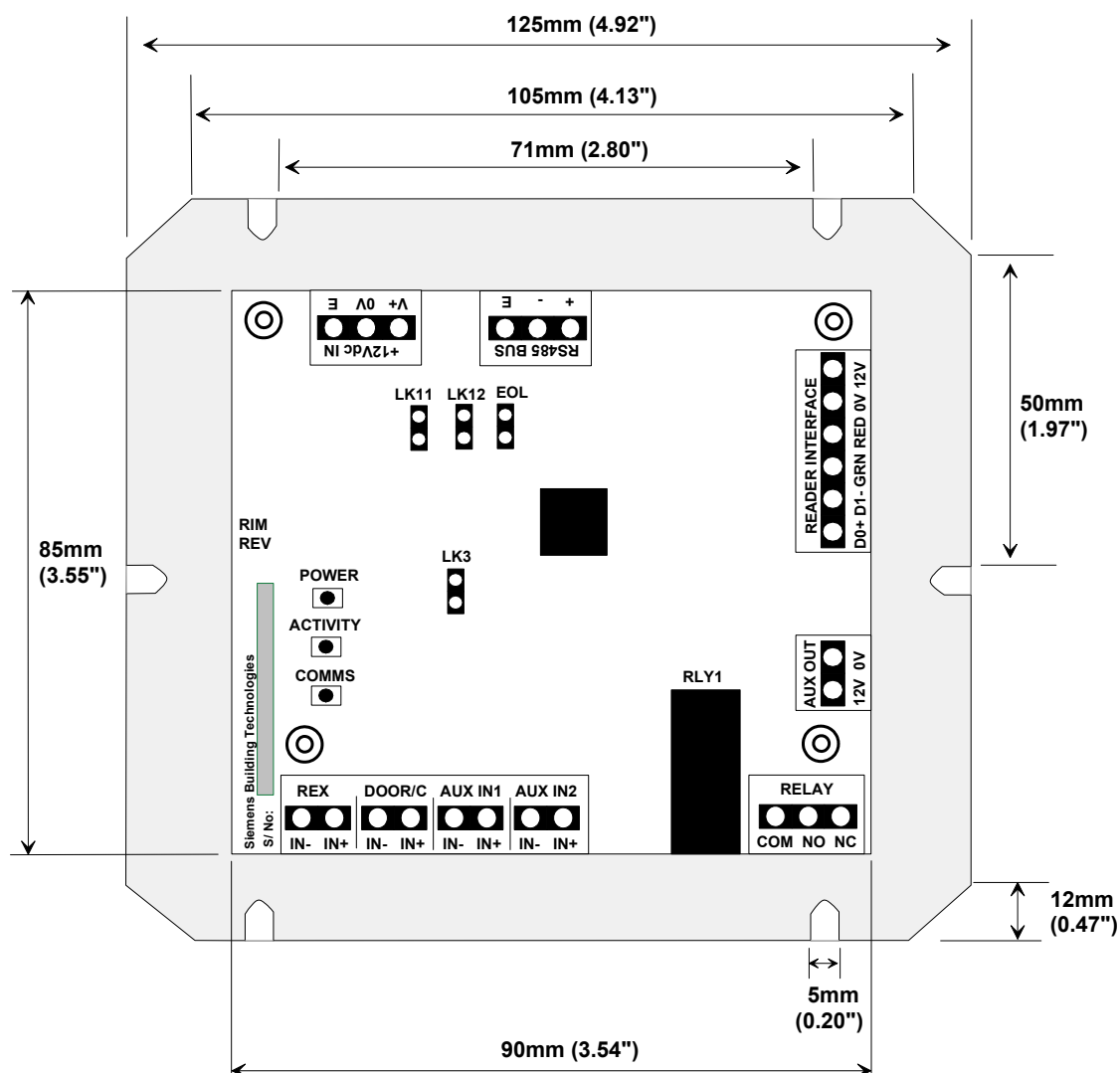
NOTE

Listed end-of-line resistors must be connected to the wires of each input device if they are to be supervised.

6. Connect the FLN wires (from the ACC) to the RS485 BUS port.
7. Connect the door strike / lock to the RELAY port. Ensure that power is also provided to the door lock / strike, and that this power supply is sufficiently rated to handle the load.
8. Connect the auxiliary output device (if required) to the AUX OUT port.
9. If the FLN cable is long or subject to high noise, ensure that the jumper across link LK5 (EOL) has been made.
10. Connect the active and neutral wires from the Power Supply Unit (PSU) to the +12Vdc IN port. Ensure the polarity of the connection is made correctly.
Maximum Input Voltage should not exceed +14V.
11. Check all connections thoroughly.
12. Power can now be connected to the ADS5200.

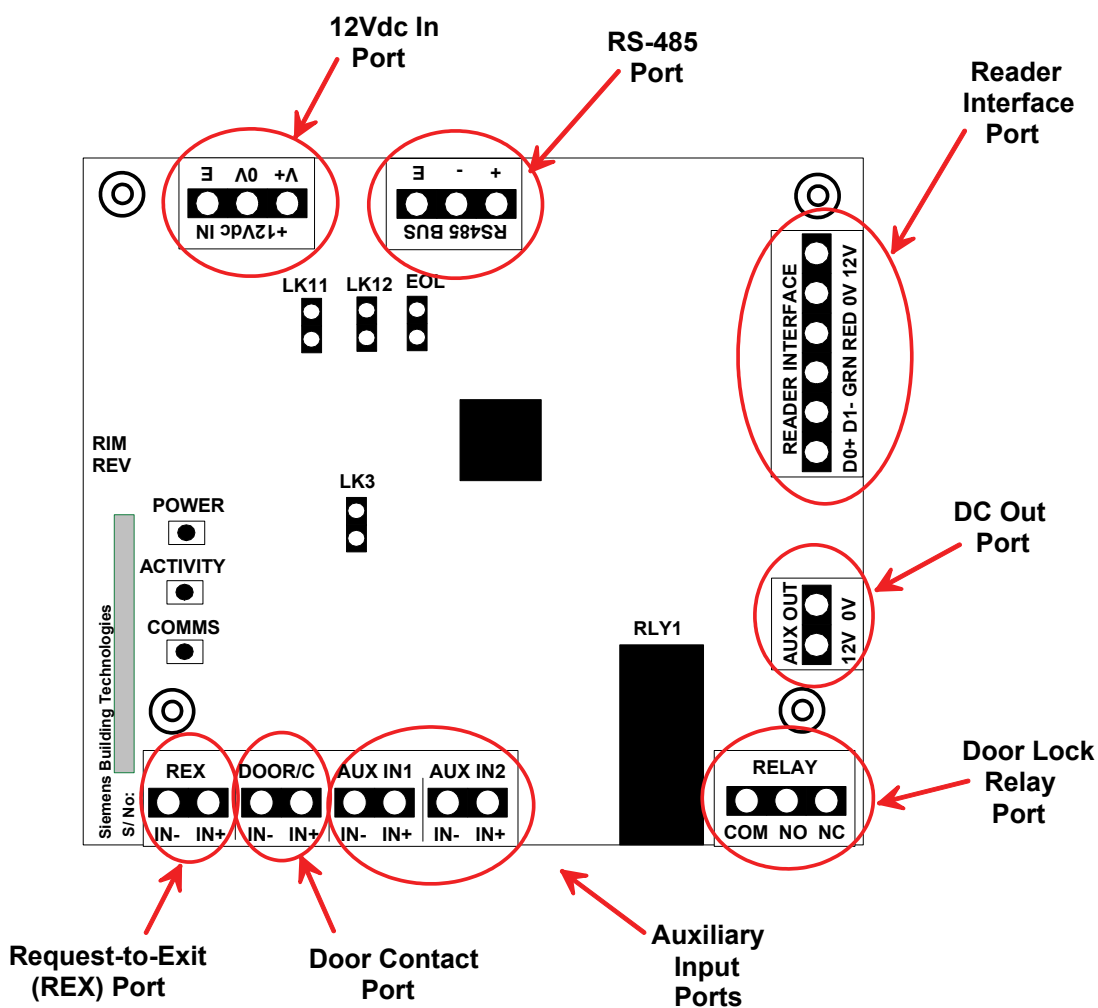
8.1 Dimensions and Layout

The following diagrams display the layout and dimensions of the ADS5200:



8.2 Port Description

The following diagram displays the location of the ports on the ADS5200:



The following table provides a brief description of each port:

Port Name	Brief Description
12Vdc IN	12Vdc power input
RS485	RS-485 communications port for connection to an ACC FLN channel
Reader Interface	Connection for a card reader providing communications, power, and LED control
Aux Out	12Vdc open collector output
Relay	Door lock / strike relay driven output
AUX IN1	Auxiliary input connection 1
AUX IN2	Auxiliary input connection 2
DOOR FR	Door contact input
PASS BK	Request-to-Exit (REX) device connection

8.3 Reader wiring

The following table outlines industry standard reader wiring to the ADS5200:

Type	D0+	D1-	GRN	RED	0V)	12V
Wiegand	D0	D1	GRN	RED	0V	12V
Magstripe (ABA Track II – Clock & Data)	RCP	RDP	GRN	RED	0V	8V / 12V
Bar Code (Differential - Pulse)	D+	D-	GRN	RED	0V	8V / 12V

8.4 Links and Jumpers

The following table outlines the link settings for the ADS5200:

Link	Description	Value	
LK3	Reset Manually power reset.	Normal Operation (jumper OFF) LK3 	Reset – by placing the jumper across this link. LK3 
LK5 (EOL)	End Of Line Termination This link allows the RS485 communications channel to be terminated in noisy or lengthy comms.	RS-485 channel terminated. EOL  LK5	RS-485 channel not terminated. EOL  LK5
LK11	Full Reset – by placing the jumper across the pins the ADS5200 will completely reset and the memory will be cleared. Please note that the ADS5200 will need to be re-programmed for operation after a full reset.		
LK12	No Link – General purpose link included for future enhancement		

8.5 LEDs

The following table describes the operation of the LEDs located on the ADS5200:

LED	Brief Description
POWER	The POWER LED is illuminated when power (12Vdc) has been applied to the ADS5200.
ACTIVITY	The ACTIVITY LED indicates that the ADS5200 is accessing information contained in its internal database or performing a routine operation function such as reading a card format. This LED also indicates whether the initial instruction set has been downloaded. If power is applied and the LED blinks quickly, the ADS5200 instruction set (firmware) needs to be downloaded. If the LED is blinking slowly, approximately once per second, a firmware set has already been downloaded.
COMMS	The COMMS LED flashes when the ADS5200 is communicating with the ACC to which it has been connected (via an FLN).

8.6 Recommended Cable Specifications

The following table outlines the cable recommended for connection of an integrated security system:

Communication Type	Recommended Cable Specifications							
	Cores	Pairs	AWG	Stranding	Wire Type	Insulation	Shield	Jacket
RS-485	4	2	28	7 x 36	Tinned Copper	Foam Polyethylene	Aluminium foil- Polyester tape / braided shield	PVC
	6	3	28	7 x 36	Tinned Copper	Foam Polyethylene	Aluminium foil- Polyester tape / braided shield	PVC
	8	4	28	7 x 36	Tinned Copper	Foam Polyethylene	Aluminium foil- Polyester tape / braided shield	PVC
RS-232	4	2	24	7 x 32	Tinned Copper	Foam Polyethylene	Aluminium foil- Polyester tape / no braid	PVC
	6	3	24	7 x 32	Tinned Copper	Foam Polyethylene	Aluminium foil- Polyester tape / no braid	PVC
	8	4	24	7 x 32	Tinned Copper	Foam Polyethylene	Aluminium foil- Polyester tape / no braid	PVC
RS-422	4	2	24	7 x 32	Tinned Copper	Foam Polyethylene	Aluminium foil- Polyester tape / no braid	PVC
	6	3	24	7 x 32	Tinned Copper	Foam Polyethylene	Aluminium foil- Polyester tape / no braid	PVC
	8	4	24	7 x 32	Tinned Copper	Foam Polyethylene	Aluminium foil- Polyester tape / no braid	PVC
RJ-45	8	4	24	Solid	Bare Copper	Polyethylene	Unshielded	PVC
	8	4	24	7 x 32	Tinned Copper	Polyethylene	Unshielded	PVC
RJ-12	8	4	24	Solid	Bare Copper	Polyethylene	Aluminium foil- Polyester tape / no braid	PVC
	8	4	24	7 x 32	Tinned Copper	Polyethylene	Aluminium foil- Polyester tape / no braid	PVC
Wiegand / Reader	6	3	28	7 x 36	Tinned Copper	Foam Polyethylene	Aluminium foil- Polyester tape / braided shield	PVC
Power (12/24Vdc)	2	1	18	19 x 30	Tinned Copper	Foam Polyethylene	Unshielded	PVC



NOTE

The above table provides a guideline for selecting an appropriate cable type only. Other cable types are also compatible with the system and can be used to achieve the same results.

9 Supported Card Formats

The following table outlines the card formats supported by a Siemens access control and security system:

Card Technology	Format
Bar Code	2 of 5
	3 of 9
	Encrypted
	Facility
Magstripe	Credit
	Encrypted
	Facility
	CerPass
	SiPass
HID Proximity	26-bit
	36-bit Asco
	Corporate 1000
	Siemens STG (*)
	Siemens 52-bit encrypted
Indala Proximity	27 bit
Cotag Proximity	27 bit
Siemens Proximity	Encrypted
MIFARE	CSN32
	CSN40
	Sector – Siemens 52-bit
MIFARE Smart	Siemens
Asset ID Proximity	IBMAAssetID1
125Khz Proximity	CerPass
Miro	CerPass
Hitag1	Cerpass
Hitag2	CerPass
Legic	CerPass

(*) For use in UL installations

10 Programming and Firmware Download

The ADS5200 is programmed using the host software application via the ACC, or using the stand-alone “Field Service Tool” application. Please refer to the respective User’s Guide for more Information.

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